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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. ; Notice No.]

RIN: 2120-

Fuselage Doors

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes to amend the design standards for fuselage doors, hatches, and exits on transport category airplanes. This action would improve door integrity by providing design criteria that would ensure that doors will remain secure under all circumstances that service experience has shown can happen. This proposal would adopt several recommendations from the NTSB (National Transportation Safety Board) and from an FAA chartered ATA (Air Transport Association) task force on doors. NTSB safety recommendations, A-89-92, A-89-93, A-89-94, A-92-21, would be addressed with specific provisions. This action also would relieve a certification burden on industry by eliminating differences between the Federal Aviation Regulations (FAR) and European Joint Airworthiness Regulations (JAR) and related certification guidance material.

DATES: Comments must be received on or before [Insert date 90 days after date of publication in the Federal Register].

ADDRESSES: Comments on this document should be mailed or delivered, in duplicate, to: U.S. Department of Transportation Dockets, Docket No. _____, 400 Seventh Street SW., Room Plaza 401, Washington, DC 20590. " Comments also may be sent electronically to the following Internet address: 9-NPRM-CMTS@faa.dot.gov. Comments may be filed and examined in Room Plaza 401 between 10:00 a.m. and 5:00 p.m. weekdays, except Federal holidays.

In addition, the FAA is maintaining an information docket of comments in the FAA, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue S.W., Renton, Washington 98055-4056. Comments in the information docket may be inspected between 7:30 a.m. and 4:00 p.m. weekdays, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: James R. Haynes, Federal Aviation Administration, Airframe/Cabin Safety Branch (ANM-115), Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (425) 227-2131; facsimile (425) 227-1320.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed action by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this document are also invited. Substantive comments should be accompanied by cost estimates. Comments must

identify the regulatory docket or notice number and be submitted in duplicate to the DOT Rules Docket address specified above.

All comments received, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking, will be filed in the docket. The docket is available for public inspection before and after the comment closing date.

All comments received on or before the closing date will be considered by the Administrator before taking action on this proposed rulemaking. Comments filed late will be considered as far as possible without incurring expense or delay. The proposals in this document may be changed in light of the comments received.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this document must include a pre-addressed, stamped postcard with those comments on which the following statement is made:

"Comments to Docket No. _____." The postcard will be date stamped and mailed to the commenter.

Availability of NPRM

An electronic copy of this document may be downloaded using a modem and suitable communications software from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703-321-3339), the Government Printing Office's (GPO) electronic bulletin board service (telephone: 202-512-1661), or, if applicable, the FAA's Aviation Rulemaking Advisory Committee bulletin board service telephone: 800-322-2722 or 202-267-5948).

Internet users may reach the FAA's web page at <http://www.faa.gov/avr/arm/nprm/nprm.htm> or the GPO's webpage at

<http://www.access.gpo.gov/nara> for access to recently published rulemaking documents.

Any person may obtain a copy of this document by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue, SW., Washington, DC 20591; or by calling (202) 267-9680. Communications must identify the notice number or docket number of this NPRM.

Persons interested in being placed on the mailing list for future rulemaking documents should request from the above office a copy of Advisory Circular No. 11-2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

Background

Following a major accident in 1974, which involved the opening of a fuselage door on a transport category airplane during flight, the FAA amended the applicable safety standards to provide a higher level of safety for fuselage doors. The FAA issued Amendment 25-54 to 14 CFR part 25 (45 FR 60172, September 11, 1980), the objective of which was to provide a level of safety in doors consistent with the level of safety required for other critical systems on the airplane, such as primary flight controls. This was achieved by requiring redundancy and fail-safe features in the door operating systems, and by providing protection from anticipated human errors.

In 1989, another wide-body transport category airplane lost a lower lobe cargo door, along with a portion of fuselage structure above the door, during flight. Because of this accident and other similar accidents, the FAA requested the Air Transport Association (ATA) to form an industry task force to review door designs

on transport category airplanes. This group was chartered to review the design and operation of doors on the current fleet of transport airplanes, and to recommend actions that would prevent any further inadvertent opening of outward opening doors. The group also was requested to review pertinent current regulations and advisory material, and to provide recommendations for necessary rule changes. The ATA provided its recommendations to the FAA in report entitled, "ATA Cargo Door Task Force Final Report," dated May 15, 1991.

As a result of its investigation of the airplane accident(s) associated with fuselage doors opening during flight, the National Transportation Safety Board (NTSB) also issued the following Safety Recommendations relating to doors on transport category airplanes, for consideration by the FAA:

Safety Recommendation A-89-092: Issue an airworthiness directive (AD) to require that the manual drive units and electrical actuators for Boeing 747 cargo doors have torque-limiting devices to ensure that the lock sectors, modified in accordance with the requirements of AD-88-12-04 [amendment 39-5934 (53 FR 18079, May 20, 1988)], cannot be overridden during mechanical or electrical operation of the latch cams.

Safety Recommendation A-89-093: Issue an airworthiness directive for non-plug cargo doors on all transport category airplanes requiring the installation of positive indicators to ground personnel and flightcrews confirming the actual position of both the latch cams and locks, independently.

Safety Recommendation A-89-094: Require that fail-safe design considerations for non-plug cargo doors on present and future transport category

airplanes account for conceivable human errors in addition to electrical and mechanical malfunctions.

Safety Recommendation A-92-21: Require that the electrical actuating systems for non-plug cargo doors on transport category aircraft provide for the removal of all electrical power from circuits on the door after closure (except for any indicating circuit power necessary to provide positive indication that the door is properly latched and locked) to eliminate the possibility of uncommanded actuator movements caused by wiring short circuits.

The FAA has responded to these safety recommendations by issuing various airworthiness directives, applicable to the current fleet of transport category airplanes, and requiring relevant modifications and inspections of the fuselage doors.

Harmonization of Regulations

The airworthiness standards for transport category airplanes are contained in 14 CFR part 25 [commonly referred to as the Federal Aviation Regulations (FAR), part 25]. Manufacturers of transport category airplanes must show that each airplane they produce of a different type design complies with the relevant standards of part 25. These standards apply to airplanes manufactured within the U.S. for use by U.S.-registered operators, and to airplanes manufactured in other countries and imported to the U.S. under a bilateral airworthiness agreement.

In Europe, the Joint Aviation Requirements (JAR) were developed by the Joint Aviation Authorities (JAA) to provide a common set of airworthiness standards for use within the European aviation community. The airworthiness standards for European type certification of transport category airplanes are contained in JAR-25, and are based on part 25. Airplanes certificated to the JAR-25

standards, including airplanes manufactured in the U.S. for export to Europe, receive type certificates that are accepted by the aircraft certification authorities of 26 European member countries.

Although part 25 and JAR-25 are very similar, they are not identical in every respect. Differences between the FAR and the JAR can result in substantial additional costs when airplanes are type certificated to both standards. These additional costs, however, frequently do not bring about an increase in safety. For example, part 25 and JAR-25 may use different means to accomplish the same safety intent. In this case, the manufacturer is usually burdened with meeting both requirements, although the level of safety is not increased correspondingly. Recognizing that a common set of standards would not only economically benefit the aviation industry, but also would maintain the necessary high level of safety, the FAA and JAA consider "harmonization" of the two sets of standards to be a high priority.

In 1988, the FAA, in cooperation with the JAA and other organizations representing the American and European aerospace industries, began a process to "harmonize" the airworthiness requirements of the United States and the airworthiness requirements of Europe.

In 1991, the FAA harmonization effort was undertaken by the Aviation Rulemaking Advisory Committee (ARAC).

The Aviation Rulemaking Advisory Committee

The ARAC was formally established by the FAA on January 22, 1991, and announced to the public on that same day in the Federal Register (56 FR 2190). The task of ARAC is to provide advice and recommendations concerning the full range

of the FAA's safety-related rulemaking activity. This advice is sought to develop better rules in less overall time using fewer FAA resources than are currently needed. The committee provides the opportunity for the FAA to obtain firsthand information and insight from interested parties regarding proposed new rules or revisions of existing rules.

There are 64 member organizations on the committee, representing a wide range of interests within the aviation community. Meetings of the committee are open to the public, except as authorized by section 10(d) of the Federal Advisory Committee Act.

The ARAC establishes separate individual working groups to develop proposals to recommend to the FAA for resolving specific issues. Tasks assigned to working groups are published in the Federal Register. Although working group meetings are not generally open to the public, all interested parties are invited to participate as working group members. Working groups report directly to the ARAC, and the ARAC must accept a working group proposal before that proposal can be presented to the FAA as an advisory committee recommendation for rulemaking. (The activities of the ARAC will not, however, circumvent the public rulemaking procedures. After an ARAC recommendation is received and found acceptable by the FAA, the agency proceeds with the normal public rulemaking procedures. Any ARAC participation in a rulemaking package will be fully disclosed in the public docket.)

In 1996, the harmonization effort was undertaken by the ARAC to harmonize the airworthiness standards related to fuselage doors. A working group of industry and government structures specialists from Europe, the United States,

and Canada was established under the aegis of ARAC and chartered by notice in the Federal Register (61FR26247, May 24, 1996). The working group was tasked to develop recommendations concerning new or revised requirements for installation of fuselage doors on transport category airplanes. The JAA is to develop a similar proposal to amend JAR-25, as necessary, to achieve harmonization.

The harmonization effort has now progressed to a point where a specific proposal has been developed by the working group and has been recommended to the FAA by ARAC for consideration as possible rulemaking. The rulemaking proposal contained in this notice is based on those recommendations developed by the working group.

Discussion

The scope of this proposal is to revise and reorganize the existing rules in 14 CFR part 25 to provide the following:

1. Clarification of the existing design requirements for doors.
2. Definitive criteria for the door design requirements that are currently covered in the existing rules by general text.
3. Additional fail-safe requirements and detailed door design requirements, based on the recommendations of the NTSB and the ATA, and on current industry practice.

Definitions

For the purpose of understanding the remainder of this proposal, the following definitions are provided.

A latch is a movable mechanical element that, when engaged, prevents the door from opening.

A lock is a mechanical element that monitors the latch position, and when engaged, prevents the latch from becoming disengaged.

Latched means the latches are fully engaged with their structural counterparts and held in position by the latch operating mechanism.

Locked means the locks are fully engaged.

Latching mechanism includes the latch operating mechanism and the latches.

Locking mechanism includes the lock operating mechanism and the locks.

Closed means that the door has been placed within the doorframe in such a position that the latches can be operated to the “latched” condition.

Fully closed means that the door is placed within the doorframe in the position it will occupy when the latches are in the latched condition.

Discussion of Proposed Changes

This action proposes changes mainly to § 25.783, “Doors.” First, the title of § 25.783 would be changed from the current “Doors” to “Fuselage doors” in order to more accurately reflect the applicability of this revised section. The term “doors,” as used in the proposed revision of § 25.783, would also include hatches, openable windows, access panels, covers, etc., on the exterior of the fuselage that do not require the use of tools to open or close. This also would include each door or hatch through a pressure bulkhead, including any bulkhead that is specifically designed to function as a secondary pressure bulkhead under the prescribed failure conditions of 14 CFR part 25.

Other specific changes to § 25.783 are as follows:

Proposed Changes to § 25.783(a)

The formatting and portions of the text of proposed § 25.783(a) would be totally revised. The proposed text would describe the types of doors to which this section of the regulations is applicable, and would clarify the fact that the requirements are intended to apply to the unpressurized portions of flight as well as to pressurized flight.

Proposed § 25.783(a) also would provide the general design requirements for doors. These general design requirements are not substantively different from the requirements contained in the existing § 25.783. A reference to the locking requirements contained in § 25.607 ("Fasteners") would be included in paragraph § 25.783(a), since experience has shown that it is advisable to add this reference to ensure that these requirements are not overlooked during the door design process.

Proposed Changes to § 25.783(b)

Paragraph 25.783(b) would be revised to require safeguards against both inadvertent and deliberate opening of doors during flight. It would clarify the existing requirement that doors must be prevented from opening inadvertently (that is, not deliberately, and without forethought, consideration, or consultation) by persons on board the airplane during flight. The intent of this requirement is to protect both the passenger and the airplane from hazards resulting from the unintentional actions by persons on board.

In addition, the proposal would make it clear that the door must be safeguarded against the deliberate opening during flight by persons on board. The proposed text makes it clear that, for doors in pressurized compartments, it should not be possible to open the doors after takeoff, when the compartment is pressurized

to a significant level. (During approach, takeoff, and landing when compartment differential pressure is lower, it is recognized that intentional opening may be possible; however, during these short phases of the flight, all passengers are expected to be seated with seat belts fastened.)

Further, for doors that can be opened under significant cabin pressure, or for doors in non-pressurized airplanes, the use of an auxiliary securing means, such as speed- or barometrically-activated devices, may be necessary. Past interpretations of the existing § 25.783(f) have resulted in this type of design requirement being applied to type certification projects. In addition, the proposed § 25.783(b) would require that, if auxiliary devices are used, they be designed so that no single failure or malfunction could prevent more than one exit from opening.

Proposed Changes to 25.783(c)

Proposed § 25.783(c) would restate the existing requirements of § 25.783(f) for a provision to prevent the airplane from becoming pressurized if the door is not fully closed, latched, and locked. The current requirement states:

“External doors must have provisions to prevent the initiation of pressurization of the airplane to an unsafe level if the door is not fully closed and locked. . . .”

However, this proposal would remove the phrase, “. . . the initiation of . . .” from this text because it is inconsistent and confusing with regard to a common method of preventing pressurization that employs vent doors. Mechanical vent doors allow the pressurization system to initiate and a small amount of pressure may exist as the air flows through the vents. The revised text would correct this inconsistency. It also would allow for certain types of doors that can safely and reliably act as their own

venting mechanism when not fully closed and latched, or that would automatically close and latch, as appropriate to the door design, before an unsafe level of pressure is reached. For these doors without an independent means, the assessment for a safe and reliable closing would include consideration of single failures and adverse conditions, such as debris in the doorway.

Proposed 25.783(c) also would provide a definitive criterion for the reliability level of the pressurization prevention system that is consistent with the interpretation of the general text of the existing rule, and that also is consistent with current industry practice for new designs. This proposed criterion is not intended to impose a new level of reliability for mechanical vent systems that is more stringent than that established by typical fail-safe designs. However, it would provide a definitive criterion for use in evaluating these vent systems or other systems that may interconnect with the airplane's pressurization system. A pressurization prevention means that would function with a high degree of reliability in spite of operator and flight crew errors, would be consistent with NTSB Safety Recommendation A-89-094, described previously, which recommends fail-safe features that account for conceivable human errors.

Proposed Changes to § 25.783(d)

Proposed § 25.783(d) would provide requirements for the detail design and fail-safe features of latching and locking mechanisms. Some of these design features are currently recommended in the existing FAA Advisory Circular (AC) 25.783-1 "Fuselage Doors, Hatches, and Exits," dated December 10, 1986; the proposed rule would make these features mandatory. One provision of this proposed requirement, which would require the removal of all power that could initiate the unlatching and

unlocking of the door during flight, is based on NTSB Safety Recommendation A-92-21, discussed previously.

For the most part, the detail design requirements for latches and locks contained in this proposed section are consistent with current industry practice, as applied to doors whose initial movement is not inward. However, the applicability of the proposed requirement would be extended to any door, unless it can be shown that unlatching would not be a hazard.

Proposed § 25.783(d) also would require that the latching mechanism be designed to eliminate forces that would tend to drive the latches to the open position. However, it is recognized that there may still be ratcheting forces that could progressively move the latches to the unlatched position. Therefore, the rule also would require that the latching system be designed such that the latches are positively secured without regard to the position of the locks.

A new provision in this proposed paragraph is the requirement for a fail-safe criterion for the locking system that would apply only to outward opening doors while under pressure. Since all the locks are usually designed as a single locking system, it is possible that single failures in the locking system could result in the unlocking of several or all the latches. Although the latches would continue to be held in the latched position by the latch system securing means, the FAA has determined that, for these more critical designs, during pressurized flight, single failures in the locking system should not unlock more latches than are needed to restrain the door.

Proposed Changes to § 25.783(e)

Proposed § 25.783(e) would require warning, caution, and advisory indications for doors. These requirements for indication are similar to the current provisions for indication of door status in this section, but provide additional features consistent with NTSB and ATA recommendations. The prescribed “improbable” level for an erroneous indication that the door is fully closed, latched, and locked is proposed to be the same as the requirement of the existing § 25.783(e), except that the applicability would be extended to each door, if unlatching of the door in flight could be a hazard.

Proposed § 25.783(e) also would require an aural warning before takeoff for each door, if opening of the door would not allow safe flight. The FAA has determined that this requirement is necessary, based on service history. It is intended that this system should function in a manner similar to the takeoff configuration warning systems required by § 25.703 (“Takeoff warning system”).

Proposed § 25.783(e) also would require that there be a positive means to display indications and signals to the door operator. This proposed requirement is consistent with NTSB Safety Recommendation A-89-093, discussed previously.

Proposed Changes to § 25.783(f)

This proposal would revise § 25.783(f) to require a provision for direct visual inspections to determine that the door is fully closed, latched, and locked. This requirement is similar to that of the current § 25.783(b), which requires a means for direct visual inspection of the locking mechanism. However, this proposal would extend the requirements to apply to any door, irrespective of the direction of initial movement, if the unlatched door could be a hazard.

Proposed Changes to § 25.783(g)

This proposal would revise § 25.783(g) to provide relief from certain requirements of the current rule that are applicable to access panels not subject to pressurization and for which unlatching would not have a detrimental effect on safety. In addition, the proposal would provide relief from certain of the current requirements applicable to:

- maintenance doors that are not a hazard if unlatched; and
- removable emergency exits, because they are not used in normal operation and therefore not subjected to the same level of human error, abuse, and damage as other doors and hatches.

Proposed Changes to § 25.783(h)

Proposed § 25.783(h) would prescribe detail design features that a door would need to have if it were to be considered as a door that is “not a hazard” when this phrase is used in other paragraphs of § 25.783.

Proposed Changes to § 25.783(i)

The current requirements of § 25.783(i) that apply to the design of air stairs (integral stair installed in a passenger entry door that is qualified as a passenger emergency exit) would be removed from § 25.783 and placed in § 25.810 (“Emergency egress assist means and escape routes”) as paragraph § 25.810(e), without change in text. The FAA considers that manufacturers, applicants, and others seeking compliance with rules would be better served by having these requirements located in the same section of the rules where other related requirements are found.

Proposed Changes to § 25.783(j)

The special requirement for lavatory doors contained in the current § 25.783(j) would be removed and set forth in a new § 25.820 ("Lavatory doors"), without change in text. The FAA considers that less confusion will be caused, and the regulated public will be better served, if all requirements pertaining to this particular subject are located in one separate place.

Other Proposed Changes

Several other provisions currently in § 25.783 would be deleted, since they duplicate the requirements applicable to emergency exit design that are contained in, or would be moved without substantive change to, other sections of part 25. The FAA considers that less confusion would be caused, and that the regulated public would be better served, if all requirements pertaining to a particular subject are located in one place. In this regard, the FAA is proposing the following specific changes:

§ 25.809(b) ("Emergency exit arrangement"): This paragraph would be revised by adding a new § 25.809(b)(3) to require that each emergency exit must be capable of being opened, when there is no fuselage deformation, "even though persons may be crowded against the door on the inside of the airplane." This specific requirement is currently a part of § 25.783(b), but is more appropriate as part of the emergency exit arrangement requirements of § 25.809.

§ 25.809(c): This paragraph would be revised to include the requirement that the means of opening emergency exits also must be marked so that it can be readily located and operated, even in darkness. This requirement is currently located

in § 25.783(b), but is more appropriate as part of the emergency exit arrangement requirements of § 25.809.

§ 25.809(f): This new paragraph would be added to require that the external door be located where persons using it will not be endangered by the propellers when appropriate operating procedures are used. This requirement currently is found in § 25.783(d), but is more applicable to the emergency exit arrangement requirements of § 25.809.

In addition, the following changes are proposed:

§ 25.807 (“Emergency exits”): The existing § 25.783 requires that passenger entry doors also meet the airworthiness standards required for emergency exits. In addition, the current Joint Airworthiness Requirement (JAR) 25.807, issued by the European JAA, requires that certain other fuselage doors, in addition to passenger entry doors, meet the same standards as emergency exits. Prior to the adoption of amendment 25-88 (61 FR 57956, November 8, 1996), 14 CFR part 25 also contained a requirement similar to that of JAR 25.807; however, that requirement was inadvertently omitted in the adoption of amendment 25-88. This proposed rule would correct this discrepancy by setting forth this requirement in a revised § 25.807(h), and by revising § 25.783 to refer to that section.

Specifically, the proposed § 25.807(h) would be revised to refer to “other exits” that must meet the applicable emergency exit requirements of §§ 25.809 through 25.813. Those exits include:

- each emergency exit in the passenger compartment in excess of the minimum number of required emergency exits;

- floor-level doors or exits that are accessible from the passenger compartment and larger than a Type II exit, but less than 46 inches wide; and
- ventral or tail cone passenger exits.

Related Advisory Material

The FAA also is proposing to issue a revised Advisory Circular 25-783-1A, “Fuselage Doors,” which would set forth an acceptable means, but not the only means, for complying with the proposed revised regulations described in this notice. The document would provide guidance for showing compliance with structural and functional safety standards for doors and their operating systems. The availability of this proposed guidance information is announced elsewhere in this Federal Register.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 [44 U.S.C. 3507(d)], the FAA had determined there are no requirements for information collection associated with this proposed rule.

Compatibility with ICAO Standards

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA determined that there are no ICAO Standards and Recommended Practices that correspond to this proposed regulation.

Regulatory Evaluation Summary

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic effect of regulatory changes on small entities. Third, the Office of Management and Budget directs agencies to assess the effects of regulatory changes on international trade. And fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation). In conducting these analyses, the FAA has determined that this proposed rule: (1) would generate benefits that justify its costs and would not be "a significant regulatory action" as defined in section 3(f) of Executive Order 12866 and, therefore, is not subject to review by the Office of Management and Budget; (2) would not have a significant impact on a substantial number of small entities; (3) would not constitute a barrier to international trade; and (4) would not contain a significant intergovernmental or private sector mandate. These analyses, available in the docket, are summarized below. The FAA invites the public to provide comments and supporting data on the assumptions made in this evaluation. All comments received will be considered in the final regulatory evaluation.

Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the Act requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 Act provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.



International Trade Impact Assessment

The provisions of this proposed rule would have little or no impact on trade for U.S. firms doing business in foreign countries and foreign firms doing business in the United States.

Federalism Implications

The regulation proposed herein would not have a substantial direct effect on the States, on the relationship between the national Government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a federalism assessment.

Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), codified in 2 U.S.C. 1501-1571, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of \$100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small

governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

This proposed rule does not contain a Federal intergovernmental or private sector mandate that exceeds \$100 million in any one year.

Environmental Analysis

FAA Order 1050.1D defines FAA actions that may be categorically excluded from preparation of a National Environmental Policy Act (NEPA) environmental assessment or environmental impact statement. In accordance with FAA Order 1050.1D, appendix 4, paragraph 4(j), this rulemaking qualifies for a categorical exclusion.

Energy Impact

The energy impact of the proposed rule has been assessed in accordance with the Energy Policy and Conservation Act (EPCA) and Public Law 94-163, as amended (42 U.S.C. 6362). It has been determined that it is not a major regulatory action under the provisions of the EPCA.

Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in Title 14 of the CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. Because this proposed rule would apply to the certification of future designs of transport category airplanes and their subsequent operation, it could, if adopted, affect intrastate aviation in Alaska. The FAA therefore specifically requests comments on whether there is justification for applying the proposed rule differently to intrastate operations in Alaska.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Recording and Recordkeeping Requirements.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend part 25 of Title 14, Code of Federal Regulations, as follows:

PART 25—AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES

1. The authority citation for part 25 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701-44702, and 44704.

2. Amend § 25.783 by revising the title and text to read as follows:

§ 25.783 Fuselage doors.

(a) General.. This section applies to fuselage doors, which includes all doors, hatches, openable windows, access panels, covers, etc., on the exterior of the fuselage that do not require the use of tools to open or close. This also applies to each door or hatch through a pressure bulkhead, including any bulkhead that is specifically designed to function as a secondary bulkhead under the prescribed failure conditions of part 25. These doors must meet the requirements of this section, taking into account both pressurized and unpressurized flight, and must be designed as follows:

(1) Each door must have means to safeguard against opening in flight as a result of mechanical failure, or failure of each single structural element.

(2) Each door that could be a hazard if it unlatches must be designed so that unlatching during pressurized and unpressurized flight from the fully closed, latched, and locked condition is extremely improbable. This must be shown by safety analysis.

(3) Each element of each door operating system must be designed or, where impracticable, distinctively and permanently marked, to minimize the probability of incorrect assembly and adjustment that could result in a malfunction.

(4) All sources of power that could initiate unlocking or unlatching of each door must be automatically isolated from the latching and locking systems prior to flight and it must not be possible to restore power to the door during flight.

(5) Each removable bolt, screw, nut, pin, or other removable fastener must meet the locking requirements of § 25.607.

(6) Certain doors, as specified by § 25.807(h), must also meet the applicable requirements of §§ 25.809 through 25.813 for emergency exits.

(b) Opening by persons. There must be a means to safeguard each door against opening during flight due to inadvertent action by persons. In addition, design precautions must be taken to minimize the possibility for a person to open a door intentionally during flight. If these precautions include the use of auxiliary devices, those devices and their controlling systems must be designed so that:

- (i) no single failure will prevent more than one exit from being opened, and
- (ii) failures that would prevent opening of the exit after landing are improbable.

(c) Pressurization prevention means. There must be a provision to prevent pressurization of the airplane to an unsafe level if any door subject to pressurization is not fully closed, latched, and locked.

(1) The provision must be designed to function after any single failure, or after any combination of failures not shown to be extremely improbable.

(2) Doors that meet the conditions described in § 25.783(h) are not required to have a dedicated pressurization prevention means if, from every possible position of the door, it will remain open to the extent that it prevents pressurization, or safely close and latch as pressurization takes place. This must also be shown with each single failure and malfunction except that:

- (i) with failures or malfunctions in the latching mechanism, it need not latch after closing, and

(ii) with jamming as a result of mechanical failure or blocking debris, the door need not close and latch if it can be shown that the pressurization loads on the jammed door or mechanism would not result in an unsafe condition.

(d) Latching and locking. The latching and locking mechanisms must be designed as follows:

(1) There must be a provision to latch each door.

(2) The latches and their operating mechanism must be designed so that, under all airplane flight and ground loading conditions, with the door latched, there is no force or torque tending to unlatch the latches. In addition, the latching system must include a means to secure the latches in the latched position. This means must be independent of the locking system.

(3) Each door subject to pressurization, and for which the initial opening movement is not inward, must --

(i) have an individual lock for each latch,

(ii) have the lock located as close as practicable to the latch, and

(iii) be designed so that, during pressurized flight, no single failure in the locking system would prevent the locks from restraining the latches as necessary to secure the door.

(4) Each door for which the initial opening movement is inward, and unlatching of the door could result in a hazard, must have a locking means to prevent the latches from becoming disengaged. The locking means must ensure sufficient latching to prevent opening of the door even with a single failure of the latching mechanism.

(5) Each door for which unlatching would not result in a hazard is not required to have a locking mechanism.

(6) It must not be possible to position the lock in the locked position if the latch and the latching mechanism are not in the latched position.

(7) It must not be possible to unlatch the latches with the locks in the locked position. Locks must be designed to withstand the limit loads resulting from --

(i) the maximum operator effort when the latches are operated manually;

(ii) the powered latch actuators, if installed; and

(iii) the relative motion between the latch and the structural counterpart.

(e) Warning, caution, and advisory indications. Doors must be provided with the following indications:

(1) There must be a positive means to indicate at the door operator's station for each door that all required operations to close, latch, and lock the door have been completed.

(2) There must be a positive means clearly visible from the operator station for each door to indicate if the door is not fully closed, latched, and locked for each door that could be a hazard if unlatched.

(3) There must be a visual means on the flight deck to signal the pilots if any door is not fully closed, latched, and locked. The means must be designed such that any failure or combination of failures that would result in an erroneous closed, latched, and locked indication is improbable for --

(i) each door that is subject to pressurization and for which the initial opening movement is not inward, or

(ii) each door that could be a hazard if unlatched.

(4) There must be an aural warning to the pilots prior to or during the initial portion of takeoff roll if any door is not fully closed, latched, and locked, and its opening would prevent a safe takeoff and return to landing.

(f) Visual inspection provision. Each door for which unlatching could be a hazard must have a provision for direct visual inspection to determine, without ambiguity, if the door is fully closed, latched, and locked. The provision must be permanent and discernible under operational lighting conditions, or by means of a flashlight or equivalent light source.

(g) Certain maintenance doors, removable emergency exits, and access panels. Some doors not normally opened except for maintenance purposes or emergency evacuation and some access panels need not comply with certain paragraphs of this section as follows:

(1) Access panels that are not subject to cabin pressurization and would not be a hazard if unlatched during flight need not comply with paragraphs (a) through (f) of this section, but must have a means to prevent inadvertent opening during flight.

(2) Inward-opening removable emergency exits that are not normally removed, except for maintenance purposes or emergency evacuation, and flight deck-openable windows need not comply with paragraphs (c) and (f) of this section.

(3) Maintenance doors that meet the conditions of § 25.783(h), and for which a placard is provided limiting use to maintenance access, need not comply with paragraphs (c) and (f) of this section.

(h) Doors that are not a hazard. For the purposes of this section, a door is considered not to be a hazard in the unlatched condition during flight, provided it can be shown to meet all of the following conditions:

(1) Doors in pressurized compartments would remain in the fully closed position if not restrained by the latches when subject to a pressure greater than ½ psi. Opening by persons, either inadvertently or intentionally, need not be considered in making this determination.

(2) The door would remain inside the airplane or remain attached to the airplane if it opens either in pressurized or unpressurized portions of the flight. This determination must include the consideration of inadvertent and intentional opening by persons during either pressurized or unpressurized portions of the flight.

(3) The disengagement of the latches during flight would not allow depressurization of the cabin to an unsafe level. This safety assessment must include the physiological effects on the occupants.

(4) The open door during flight would not create aerodynamic interference that could preclude safe flight and landing.

(5) The airplane would meet the structural design requirements with the door open. This assessment must include the aeroelastic stability requirements of § 25.629, as well as the strength requirements of this subpart.

(6) The unlatching or opening of the door must not preclude safe flight and landing as a result of interaction with other systems or structures.

3. Amend §25.807 by revising paragraph (h) to read as follows:

§ 25.807 Emergency exits.

* * * * *

(h) Other exits. The following exits also must meet the applicable emergency exit requirements of §§ 25.809 through 25.813:

(1) Each emergency exit in the passenger compartment in excess of the minimum number of required emergency exits.

(2) Any other floor-level door or exit that is accessible from the passenger compartment and is as large or larger than a Type II exit, but less than 46 inches wide.

(3) Any other ventral or tail cone passenger exit.

4. Amend § 25.809 by adding a new paragraph (b)(3), and by revising paragraphs (c) and (f) to read as follows:

§ 25.809 Emergency exit arrangement.

* * * * *

(b) * * * * *

(3) Even though persons may be crowded against the door on the inside of the airplane.

(c) The means of opening emergency exits must be simple and obvious; may not require exceptional effort; and must be arranged and marked so that it can be readily located and operated, even in darkness. Internal exit-opening means involving sequence operations (such as operation of two handles or latches, or the release of safety catches) may be used for flight crew emergency exits if it can be

reasonably established that these means are simple and obvious to crewmembers trained in their use.

* * * * *

(f) Each door must be located where persons using them will not be endangered by the propellers when appropriate operating procedures are used.

* * * * *

5. Amend § 25.810 by adding a new paragraph (e), as follows:

§ 25.810 Emergency egress assist means and escape routes.

* * * * *

(e) If an integral stair is installed in a passenger entry door that is qualified as a passenger emergency exit, the stair must be designed so that, under the following conditions, the effectiveness of passenger emergency egress will not be impaired:

(1) The door, integral stair, and operating mechanism have been subjected to the inertia forces specified in § 25.561(b)(3), acting separately relative to the surrounding structure.

(2) The airplane is in the normal ground attitude and in each of the attitudes corresponding to collapse of one or more legs of the landing gear.

6. Add a new § 25.820 to read as follows:

§ 25.820 Lavatory doors.

All lavatory doors must be designed to preclude anyone from becoming trapped inside the lavatory. If a locking mechanism is installed, it must be capable of being unlocked from the outside without the aid of special tools.

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